REMARKS

This responds to the Office Action dated 22 September 2003.

Request for Reconsideration

Applicant respectfully requests reconsideration of the application in view of the following remarks.

Applicant disagrees with the Examiner's claim rejections under 35 U.S.C. § 102 and §103 over Woodhead et al. and Campbell et al. The Examiner appears to have a fundamental misunderstanding of basic wave theory as it applies to phase. The Examiner erroneously states that "the phase shift is basically the delay of the frequency wave from one point to another." This statement illustrates a clear misunderstanding of the meaning of the term "phase shift." Woodhead et al. is directed to a single wave, and phase difference has no meaning in a single wave train such as that taught by Woodhead et al. Phase shift is certainly not "the delay of the frequency from one point to another." Phase only has meaning when comparing two wave trains of equal frequency, which Woodhead et al. does not disclose. Phase differences are usually expressed as an angle. For example, a phase difference of 0 degrees means that two waves coincide, while a phase difference of 180 degrees means that when one wave goes up, the other goes down.

Applicant respectfully suggests that the Examiner reconsider the finality of the prior Office Action based upon a misunderstanding or misapplication of basic wave theory. Woodhead et al. cannot possibly detect phase shifts when there is only one wave. A single wave cannot be out of phase with itself. Applicant believes the Examiner has mistakenly assumed that the "line del-y" referred to by Woodhead et al.

has something to do with phase. The "line delay" discussed by Woodhead et al. is the time for the output of the line receiver to propagate down the transmission line. Perhaps the use of the term "delay" instituted the confusion by the Examiner, but "phase shift" or "phase delay" or "phase difference" as discussed in the present application and as the terms are understood by those of ordinary skill in the art have no meaning in reference to a single wave form. As an aid to the Examiner, Applicant includes the following diagram below illustrating two sinusoidal waves that are 90 degrees "out of phase" with one another.

As can be readily seen, the frequencies of both waves are the same, but there is a phase difference. Again, phase is not a time difference from one point to another along a single wave train as indicated in the Office Action.

Provisional Amendment

Nevertheless, if the Examiner refuses to correct his misunderstanding of phase shift and phase detectors and issue a new non-final Office Action, Applicant makes the following changes to the application. Claims 7, 11, 12, and 14 remain pending in the application. New dependent claims 16-18 have been added. Claims 1-6, 8-10, 13, and 15 have been canceled.

The Examiner has acknowledged that claim 7 is directed to allowable subject matter. Pending claims 11, 12, and 14 have been amended to now depend from claim 7.

Therefore, claims 11, 12, and 14 are also allowable. In addition, new claims 16-18 depend from claim 7 and therefore should also be allowable.

Applicant has made a good-faith effort to resolve all matters with respect to the present application despite the misunderstandings of the Examiner. Applicant believes that the claims are in condition for allowance, although Applicant suggests that a new non-final Office Action is in order. If there are any matters yet to be resolved in connection with this application, or if Applicant can be of any assistance in clearing up the Examiner's misunderstandings, Applicant requests the Examiner to telephone the undersigned attorney to expedite the handling of this matter.

Respectfully submitted,

Date: 22 DECEMBER 2003

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